

Appl. No. 10/626,556
Amdt. dated September 1, 2005
Reply to Office action of June 1, 2005

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

5 **Listing of Claims:**

Claims 1-51 canceled.

Claim 52 (New): An erosion-resistant fluid-handling part comprising:

a fluid-handling part;

10 a coating composition disposed on the fluid-handling part at a dry film thickness greater than about 200 μm , wherein the coating composition comprises:

a trifunctional silane ranging from about 0.01% by weight to about 20% by weight of the coating composition;

15 a silanol fluid having a weight average molecular weight of at least 4000 g/mol and wherein the silanol fluid ranges from about 40% by weight to about 99% by weight of the coating composition; and

fumed silica ranging from about 0.01% by weight to about 25% by weight of the coating composition.

20 Claim 53 (New): An erosion-resistant fluid handling part according to claim 52, wherein the coating composition has a dry film thickness ranging from about 200 μm to about 3000 μm .

25 Claim 54 (New): An erosion-resistant fluid-handling part according to claim 52, wherein the silanol fluid has a weight average molecular weight ranging from about 4000 g/mol to about 150,000 g/mol.

Claim 55 (New): An erosion-resistant fluid-handling part according to claim 52, wherein the coated fluid-handling part has a particle-impact erosion rate less than about 13% of the particle-impact erosion rate of uncoated 1100 aluminum.

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Claim 56 (New): An erosion-resistant fluid-handling part according to claim 52, further comprising a primer composition disposed on the fluid handling part.

5 Claim 57 (New): An erosion-resistant fluid-handling part according to claim 56, wherein the primer composition is an epoxy primer composition comprising an epoxy blend, an aliphatic amine, and a silane adhesion promoter.

10 Claim 58 (New): An erosion-resistant fluid-handling part according to claim 57, wherein the silane adhesion promoter is selected from the group consisting of: a trimethoxysilane, a triethoxysilane, and 3-glycidoxypopyl trimethoxysilane.

15 Claim 59 (New): An erosion-resistant fluid-handling part according to claim 52, wherein the fluid-handling part is selected from the group consisting of: hydro turbines, gas turbines, tide mills, windmills, compressors, pumps, blowers, impellers, propellers, fans, runners, wheels, rings, stay rings, rotors, buckets, blades, turbine blades, runner blades, fan blades, compressor blades, propeller blades, vanes, stay vanes, helicopter rotors, hydroelectric turbines, marine propellers, housings, jackets, shrouds, hubs, shafts, flanges, tanks, surge vessels, pipes, supply pipes, ducts, intake manifolds, channels, guides, tailraces, headraces, flumes, draft tubes, air intake ducts, combustion engine
20 manifolds, apertures, eyes, nozzles, jets, jet deflectors, valves, check valves, ball valves, globe valves, pin valves, gate valves, valve seats, gates, wicket gates, wicket gate arms, wicket gate links, spear valves, spear tips, penstocks, spiral cases, volutes, strainers, cutwaters, bulkheads, control surfaces, balanced control surfaces, flight control surfaces, wings, slots, flaps, fuselages, fairings, antennae, and domes.
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Claim 60 (New): An erosion-resistant fluid-handling part according to claim 59, wherein the fluid-handling part is a hydroelectric turbine.

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Claim 61 (New): An erosion-resistant fluid-handling part according to claim 52, wherein the fluid-handling part has a first erosion-resistant coating disposed thereon and wherein a second erosion-resistant coating is disposed on the first erosion-resistant coating.

- 5 Claim 62 (New): An erosion-resistant fluid-handling part comprising:
a hydroelectric turbine;
an epoxy primer composition disposed on the hydroelectric turbine, the epoxy
primer composition comprising an epoxy blend, an aliphatic amine, and a silane adhesion
promoter;
10 a coating composition disposed on the epoxy primer composition at a dry film
thickness ranging from about 200 μm to about 3000 μm , wherein the coating composition
comprises:
a trifunctional silane ranging from about 0.01% by weight to about 20% by
weight of the coating composition;
15 a silanol fluid having a weight average molecular weight ranging from about 4000
g/mol to about 150,000 g/mol and wherein the silanol fluid ranges from about 40% by
weight to about 99% by weight of the coating composition; and
fumed silica ranging from about 0.01% by weight to about 25% by weight of the
coating composition.
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- Claim 63 (New): An erosion-resistant fluid-handling part according to claim 62, wherein the coated hydroelectric turbine has a particle-impact erosion rate less than about 13% of the particle-impact erosion rate of uncoated 1100 aluminum.